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FLOOD INSURANCE STUDY



**MORGAN COUNTY,
COLORADO**
UNINCORPORATED AREAS



SEPTEMBER 29, 1989

Federal Emergency Management Agency

COMMUNITY NUMBER - 080129

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. Please contact the community repository for any additional data.

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FLOOD INSURANCE STUDY
MORGAN COUNTY, COLORADO (UNINCORPORATED AREAS)

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the unincorporated areas of Morgan, County, Colorado, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to establish actuarial flood insurance rates and assist the community in their efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Gingery Associates, Inc., of Englewood, Colorado, as reported in Floodplain Information Report, Beaver Creek, Brush, Colorado (Reference 1), and the U.S. Army Corps of Engineers (COE), Omaha District, as reported in Special Flood Hazard Information Report, South Platte River, Volume II (Reference 2). The studies were completed in April 1976 and May 1977, respectively.

1.3 Coordination

On November 29, 1988, the results of this study were reviewed and accepted at a final coordination meeting attended by representatives of the community and FEMA.

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2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Morgan County, Colorado. The areas of study are shown on the Vicinity Map (Figure 1).

Beaver Creek was studied by detailed methods from Interstate 76 to a point approximately 11,130 feet upstream from its confluence with Upper Platte and Beaver Canal, a reach of approximately 7.4 miles.

The South Platte River was studied by approximate methods from a point approximately 900 feet downstream of the county road at Balzac to the Weld County line, a reach of approximately 47 miles.

The areas studied by detailed methods were selected based on the extent and validity of available existing hydrologic and hydraulic data.

Approximate methods of analysis were used to study all the remaining areas having a potential flood hazard that did not have available detailed scientific or technical data.

2.2 Community Description

Morgan County is located in the northeastern corner of Colorado; Fort Morgan is the county seat. Morgan County borders Weld County on the west and north, Logan County on the northeast corner, Washington County on the east and southeast, and Adams County on the south.

According to the 1980 U.S. Bureau of the Census, Morgan County covers an area of 1,276 square miles and has a population of 22,513. This is a 12-percent increase from its 1970 population of 20,105 (Reference 3).

The mean annual temperature for the county is 48.9°F; the warmest month is July, with a mean temperature of 74°F. The average annual precipitation for the county is 13 inches, which includes an average of 26 inches of snowfall (Reference 3).

The South Platte River floodplain in Morgan County is used primarily for agriculture. Except for the areas adjacent to incorporated communities such as Fort Morgan, existing floodplain development consists mostly of farm and ranch buildings.

The vegetation in the area includes farm crops and prairie grasses. The predominant soils in the area consist of sand and sandy loam soils with smaller amounts of silt loam and clay loam (Reference 1).

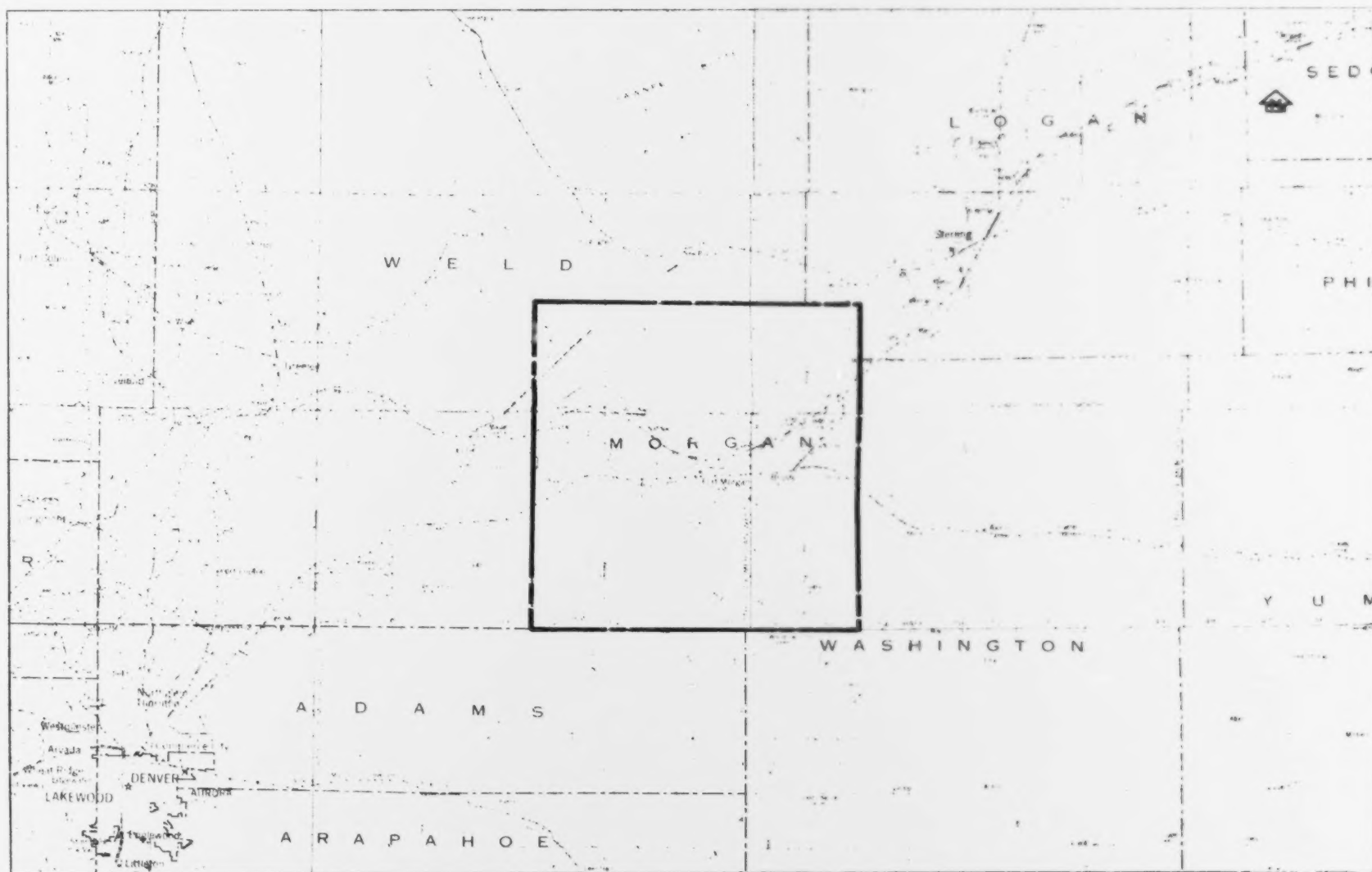


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MORGAN COUNTY, CO
(UNINCORPORATED AREAS)

APPROXIMATE SCALE

16 0 16 32 48 MILES

VICINITY MAP

3

2.3 Principal Flood Problems

The normal low flow channel for Beaver Creek meanders through the study reach traversing approximately 7.4 miles through the 4-mile reach of the floodplain. The topography adjoining Beaver Creek is very flat to the west but quite steep to the east. Through the study reach, six major roads and railroads cross the creek. Two of these facilities, the Burlington Northern Railroad directly east of town, and County Road DLD, 0.5 mile south of town, significantly affect floodflows within the floodplain.

In addition to the road and railroad crossings within the floodplain, the City of Brush is located in the floodplain area. The road and railroad embankments as well as the buildings and streets in the city serve as obstructions to the orderly passage of floodflows through this portion of Beaver Creek. Through the study reach, the main channel is small, inadequate, and restricted by the natural vegetation, thus limiting the effectiveness of the channel.

The primary obstructions to floodflows through the study area are the brush and vegetation growing along the channel, roads, railroad embankments, and bridges in the floodplain. During periods of high water, these facilities tend to impede floodflows, thereby causing backwater conditions that increase flood heights upstream and flood velocities downstream. Debris that is washed downstream by floodwaters collects and obstructs downstream bridges and culverts, thus raising floodwaters in these areas. The accumulation of debris on the Burlington Northern Railroad bridge would greatly increase the threat and severity of flooding within the City of Brush (Reference 1).

Flood events on Beaver Creek are the result of intense thunderstorms occurring in the basin. Being subject to heavy rain events of cloudburst intensity, flooding in the upper part of the basin will characteristically have high peak discharges of short duration lasting only a few hours. As the flood event passes into the lower reaches of the creek near Brush, channel storage reduces the flood magnitude and the flood stages.

The 100-year flood is one with a peak flow magnitude that has a 1-percent chance of being equalled or exceeded in any given year and a frequency of occurrence of about once in 100 years on the long-term average. Similarly, the 10-year, 50-year and 500-year floods have a 10-percent, 2-percent, and 0.2-percent chance, respectively, of being equalled or exceeded in any given year, and an average frequency of occurrence of about once in the number of years indicated.

These flows have been estimated based on recorded flood occurrences in the high plains area of eastern Colorado, western Kansas and southwestern Nebraska, and are typical of the Beaver Creek drainage area.

Typically, the flood events will move into the Brush community at a speed of 2 to 4 miles per hour. Flood peaks may last for a duration of 2 to 10 hours while high flood stages may remain in the area for periods of 20 to 30 hours.

The flat topography of this reach of Beaver Creek tends to widen the floodplain area and reduce the depths and velocities of the floodflow as it passes through the area. In the reach of Beaver Creek between the Burlington Northern Railroad and Interstate 76, the average flow velocity in the main channel area for the 100-year flood event would be 3 to 4 feet per second. Average flow velocities in the floodplain west of the main channel, including the downtown area, would average between 1 to 3 feet per second. The floodplain east of the main channel would have average velocities ranging between 1 and 4 feet per second. Floodflow depths would be shallow throughout the reach, ranging from approximately 0.5 to 1 foot along the eastern edge of town to a maximum depth of 4 to 4.5 feet on Clayton Street.

Between County Road DLD and the Burlington Northern Railroad, the average flow velocity for the 100-year flood event in the main channel would be approximately 2 to 3 feet per second. The fringe areas of floodplain would experience average velocities of 1 to 2 feet per second west of the main stream and approximately 0.7 to 1.2 feet per second east of the main stream. Flow depths in the wide floodplain area west of the creek would average between 1.5 to 2 feet.

From County Road DLD to the upstream study limits, the main channel velocities are much higher, ranging from 6 to 10 feet per second. Through the same reach, the overbank or fringe area velocities average between 2.5 to 5 feet per second west of the Beaver Creek main channel and 2 to 4 feet per second east of Beaver Creek channel. The average flow depths on the agricultural areas within the floodplain on the west average between 0.5 and 2 feet.

Special note should be made of the potential hazardous flood velocities and depths in the downtown and residential areas of the city. Average velocities for the 100-year flood event were estimated to range between 1 to 3 feet per second; however, localized velocities on streets and around obstructions may be 2 or 3 times the average velocity. Velocities in excess of 2 to 4 feet per second and depths in excess of 2 to 3 feet are considered hazardous to human safety and welfare (Reference 1).

Other sources of possible flooding near Brush include the Brush Lateral Canal and Badger Creek overflows. Both of these flood sources were inspected and evaluated to ascertain an opinion on the extent and possibility for diverting flood waters into the City of Brush.

The U.S. Geological Survey (USGS) quadrangle maps show the ground topography east of Badger Creek to slope towards the City of Brush, approximately 4.5 miles east. As a result, there is concern for the possibility of floodwaters overtopping the channel banks in Badger Creek at the Burlington Northern Railroad and State Highway 6-34 crossings and for the floodwaters to travel east to Brush.

Hydrologic calculations indicate the magnitude of the 100-year flood on Badger Creek to range between 25,000 (cubic feet per second) cfs and 30,000 cfs. Hydraulic computations show that the backwater effect created by both the railroad and highway embankments is sufficient to overtop the channel banks. However, the depth of water overtopping the channel banks at either location is not sufficient to move the excess flood waters over the 4.5 miles of cultivated fields and irrigation laterals and embankments and into Brush. Still, flooding can be expected to occur for some distance east of Badger Creek along the railroad and highway. The worst situation is along the railroad because of the higher embankment and no provisions for flow to overtop the embankment.

~~Floodings have been experienced in Brush and its vicinity from the South Platte River, particularly during the late fall and winter months. The most serious flooding occurred in 1963 when the river rose to a stage of 26,300 cfs. This stage was comparable to approximately a 25-year flood event. Figure 2 shows an aerial view of the approximate flood limits of the 1963 flood in the area southeast of Brush (Reference 3).~~

~~The South Platte River in Morgan County generally flows easterly from the Weld-Morgan County line toward Fort Morgan where it gradually turns and flows in a northeasterly direction into Washington County. Throughout this reach the South Platte River flows in a relatively well defined channel. This channel is typically braided and is situated in a broad shallow valley ranging in width from about 1,500 feet to about 21,000 feet and is flanked by rolling plains. The streambed slope of the South Platte River in Morgan County is relatively uniform, generally ranging between 1 foot per mile and 3 feet per mile and averaging 1.5 feet per mile. The drainage area of the South Platte River in Morgan County varies considerably from the Weld-Morgan County line to the Washington-Morgan County line due mainly to the number of relatively large tributaries draining primarily the plains areas located to the south of Morgan County.~~

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Flooding along the South Platte River in Morgan County normally occurs from May through September with the most frequent flooding occurring during June. Annual peak discharges, however, have been recorded from February through October. Floods in Morgan County normally occur under non-ice affected conditions. Ice jams, however, are possible even though their historical frequency of occurrence is rare.

Floodwaters on the South Platte River in Morgan County can result from intense localized rainfall or general rains, either of which may be augmented by snowmelt. The intense rainstorm floods result from intense rainfall over areas of relatively small aerial extent. These storms can produce extremely rapid concentrations of floodwaters and ensuant rapid rises in stream levels. Because of the lack of warning time prior to streams attaining flood stages, this type of storm can produce floods which are extremely hazardous. This type of flood produces high peak discharges on tributaries in the general vicinity of the rainstorm. The discharge, however, attenuates rapidly on the South Platte River downstream from the contributing floodwaters due to valley storage of the floodwaters.

The general floodwaters from the South Platte River and its tributaries, however, are not so rapid in their rise and fall. The floodwaters on the South Platte River are the result of a prolonged period of heavy rain. The duration of the heavy rain may be several days to a week or more. Because of the large area of rainfall, more tributaries contribute to the peak discharge on the South Platte River. This results in increasing discharge progressively downstream over a considerable length of the South Platte River. However, downstream from the contributing tributaries, the effects of valley storage cause flood discharge attenuation.

Erosive effects can be considerable in the event of any flood regardless of its origin. Floods resulting from intense rainstorms typically create severe erosion damages in a short period of time due to the relatively large peak discharge and high velocity of the floodwater. Erosion damages from snowmelt or general rainstorm floods usually result from prolonged exposure of the floodwater because of the long duration typical of these floods.

A 100-year flood or a 500-year flood on the South Platte River in Morgan County would result in the inundation of and subsequent damage to primarily agricultural properties and associated developments as well as public utilities and public roadways. Deep floodwater flowing at high velocity and carrying floating debris would create conditions hazardous to persons and vehicles attempting to cross flooded areas. In general, floodwater of this magnitude and velocity is a serious hazard to life and property.

second could easily sweep an adult person off his feet, thus creating definite danger of injury or drowning. Rapidly rising and swiftly flowing floodwater may trap persons in homes that are ultimately destroyed or in vehicles that are ultimately submerged or floated. Isolation of areas by floodwaters could create hazards in terms of medical, fire, or law enforcement emergencies (Reference 3).

2.4 Flood Product Use Measures

There are no existing or impending flood control structures in the study area or upstream of the study area which would tend to reduce the present flood hazard. Many small irrigation water storage facilities and farm stock ponds exist along Beaver Creek and within the Beaver Creek basin; however, these facilities have little, if any, impact on regulating or controlling the impact of major floodwaters downstream.

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For the flooding sources studied by detailed methods in the community, floodwater depths of 6 ft or more are less likely to inundate the town than are depths of 3 ft or less. Flood waters of 3 ft or less are expected to inundate about 10 percent of the town area, while flood waters of 6 ft or more are expected to inundate about 1 percent of the town area. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1-percent chance of annual exceedance) in any 50-year period is approximately 49 percent (5 in 10), and, for any 90-year period, the risk increases to approximately 80 percent (8 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analysis

Hydrologic analyses were carried out to establish the peak discharge-frequency relationship for each flooding source studied by detailed methods affecting the community.

The hydrologic analysis was completed to estimate the peak discharge-frequency relationships for floods of 10, 20, 100, and 500 year recurrence intervals for Beaver Creek. The flood peak estimates were based on a statistical analysis of recorded stream

flow records for comparable drainage areas in the high plains area of eastern Colorado, western Kansas and southwestern Nebraska. The estimates prepared for this report were made utilizing the statistically analyzed data of the USGS (Reference 4).

A considerable amount of historic stream gage data do exist for the South Platte River that are pertinent to Morgan County. The USGS has published information collected at the South Platte river stream gages in Morgan County.

Information from these gages was used in the hydrologic analysis conducted during this study.

Peak discharge-drainage area relationship for Beaver Creek are shown in Table 1.

TABLE 1. SUMMARY OF DISCHARGES

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (SQ MILES)</u>	<u>PEAK DISCHARGE (CFS)</u>			
		<u>10-YEAR</u>	<u>50-YEAR</u>	<u>100-YEAR</u>	<u>500-YEAR</u>
Beaver Creek At Brush	1,089	12,400	37,000	55,000	119,600

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the riverine sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Analyses of the hydraulic characteristics of Beaver Creek were completed to provide estimates of the water-surface elevations for the selected recurrence intervals. The water-surface elevations were computed using the HEC-2 Water-Surface Profiles step-backwater computer program (Reference 5). Cross sections for the backwater analysis of Beaver Creek were taken from the topographic maps. Digitized cross sections were secured in the area south of County Road DLD.

Water-surface elevation data for the South Platte River were computed through the use of the COE HEC-2 Water-Surface Profiles computer program. These computations were based upon channel and floodplain conditions as represented by surveys conducted in the spring of 1973.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1), and are also shown on the Flood Insurance Rate Map (Exhibit 2).

Floodplain roughness factors (Manning's "n") used in these computations were selected based on field inspection of the actual floodplain conditions (Reference 1). The roughness factors used in this study are listed below:

Channel area	n = 0.035
Overbank area (fields)	n = 0.030
Developed overbank areas (within city):	n = 0.050

Starting water-surface elevations for Beaver Creek were based on a statistical analysis of recorded stream flow records for comparable drainage areas in the high plains area of eastern Colorado, western Kansas, and southwestern Nebraska.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this study are based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum (NGVD) of 1929. Elevation reference marks used in this study are shown on the maps; the descriptions of the marks are presented in Elevation Reference Marks (Exhibit 3).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study includes a floodplain boundary map designed to assist communities in developing sound floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods the boundaries of the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section.

Between cross sections, the boundaries for Beaver Creek were interpolated using simple survey methods from the established markers or by scaling from physical features shown on the map.

The floodplain boundaries for the South Platte River were also interpolated by survey methods. USGS 7.5 Minute Quadrangle Maps were also used in this interpolation.

Appropriate areas were plotted using existing Flood Hazard Boundary Maps (FHBMs) (Reference 9) and Flood Prone Quadrangle Maps (Reference 10).

The 100- and 500- year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close-together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary is shown on the Flood Insurance Rate Map (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increases in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without the substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 feet, provided that hazardous velocities are not produced.

For this Flood Insurance Study, floodways were not computed.

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains determined in the Flood Insurance Study by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains, and the locations of selected cross sections used in the hydraulic analysis.

7.0 OTHER STUDIES

This Flood Insurance Study was prepared by compiling existing hydrologic and hydraulic analyses and utilizing technical and scientific data prepared by other organizations originally for purposes other than those of the NFIP. The data were identified as the best available at the time of compilation of this study and should depict the general conditions of the flooding sources with relative accuracy. FEMA performed a cursory review and accepted the data as valid for purposes of this Flood Insurance Study and the NFIP. However, if better information is known to exist or has been developed since the date of this report, the information should be immediately forwarded to the Natural and Technological Hazards Division, FEMA, Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267 for consideration in revision of this study.

This study is in complete agreement with the existing Flood Insurance Rate Maps for the Cities of Fort Morgan, Brush, and Wiggins, Colorado, all of which lie in Morgan County (References 6, 7, and 8, respectively).

A Flood Hazard Boundary Map has been published for the community. (Reference 9). The difference between the Flood Hazard Boundary Map and this study are justified due to the more detailed nature of this Flood Insurance Study.

This report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

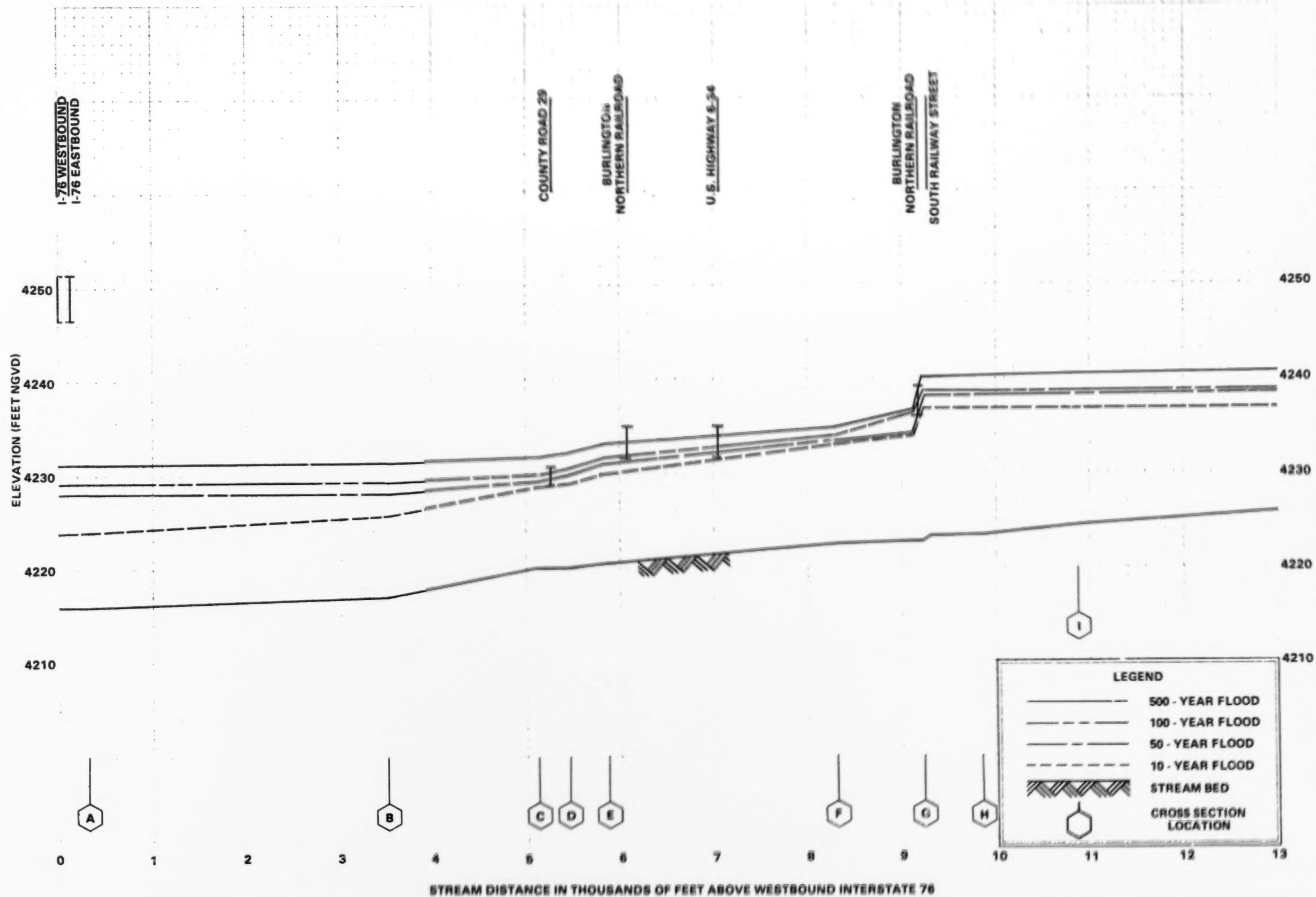
8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, Denver Federal Center, Building 710, Box 2567, Denver, Colorado 80225-0267.

9.0 BIBLIOGRAPHY AND REFERENCES

1. Gingery Associates, Inc., Floodplain Information Report, Beaver Creek, Brush, Colorado, Englewood, Colorado, prepared for the City of Brush, Colorado, and the Colorado Water Conservation Board, April 1976.
2. U.S. Army Corps of Engineers, Omaha District, Special Flood Hazard Information Report, South Platte River, Morgan County-Washington County, Colorado, Volume II, prepared for Morgan County, Washington County, and the Colorado Water Conservation Board, May 1977.
3. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Colorado.

4. U.S. Department of the Interior, Geological Survey, "Manual for Estimating Flood Characteristics of Natural-Flow Streams in Colorado," 1975.
5. U.S. Army Corps of Engineers, HEC-2 Water-Surface Profiles Computer Program, Hydrologic Engineering Center, Davis, California.
6. Federal Insurance Administration, Federal Emergency Management Agency, Flood Insurance Rate Map, Fort Morgan, Colorado, February 5, 1986.
7. Federal Insurance Administration, Federal Emergency Management Agency, Flood Insurance Rate Map, Brush, Colorado, October 13, 1981.
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9. Federal Insurance Administration, Federal Emergency Management Agency, Flood Hazard Boundary Map, Morgan County, Colorado, May 12, 1981.
10. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Judson Hills, Colorado (1951); Sunken Lake, Colorado (1951); Greasewood Lake, Colorado (1950); New Raymer 3 S.W., Colorado, Peace Valley School, Colorado (1951); Dead Horse Springs, Colorado (1951); Antelope Springs, Colorado (1951); Orchard, Colorado (1974); Weldona, Colorado (1974); Fort Morgan, Colorado (1970); Brush West, Colorado (1973); Brush East, Colorado (1973); Wiggins, Colorado (1974); Valley S.E., Colorado (1965); Vallery, Colorado (1963); Miller Ranch, Colorado (1965); Hoyt, Colorado (1950); Adena, Colorado (1963); Huey Ranch, Colorado (1965); Gary, Colorado (1965); Rago, Colorado (1973); Wiggins S.W., Colorado (1950); Omar, Colorado (1951); Masters, Colorado (1950); and Messex, Colorado (1974).



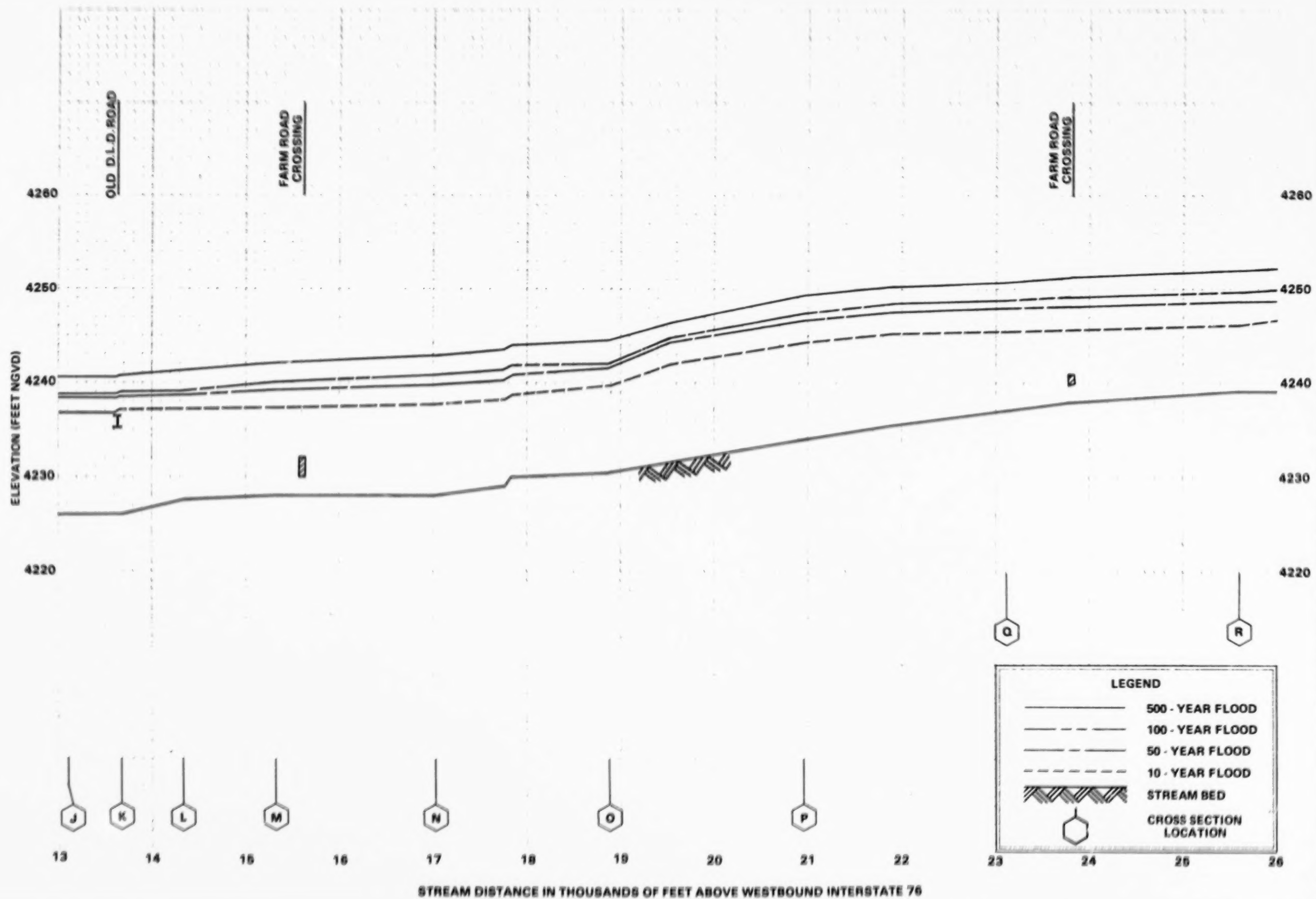
FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MORGAN COUNTY, CO
(UNINCORPORATED AREAS)

01P



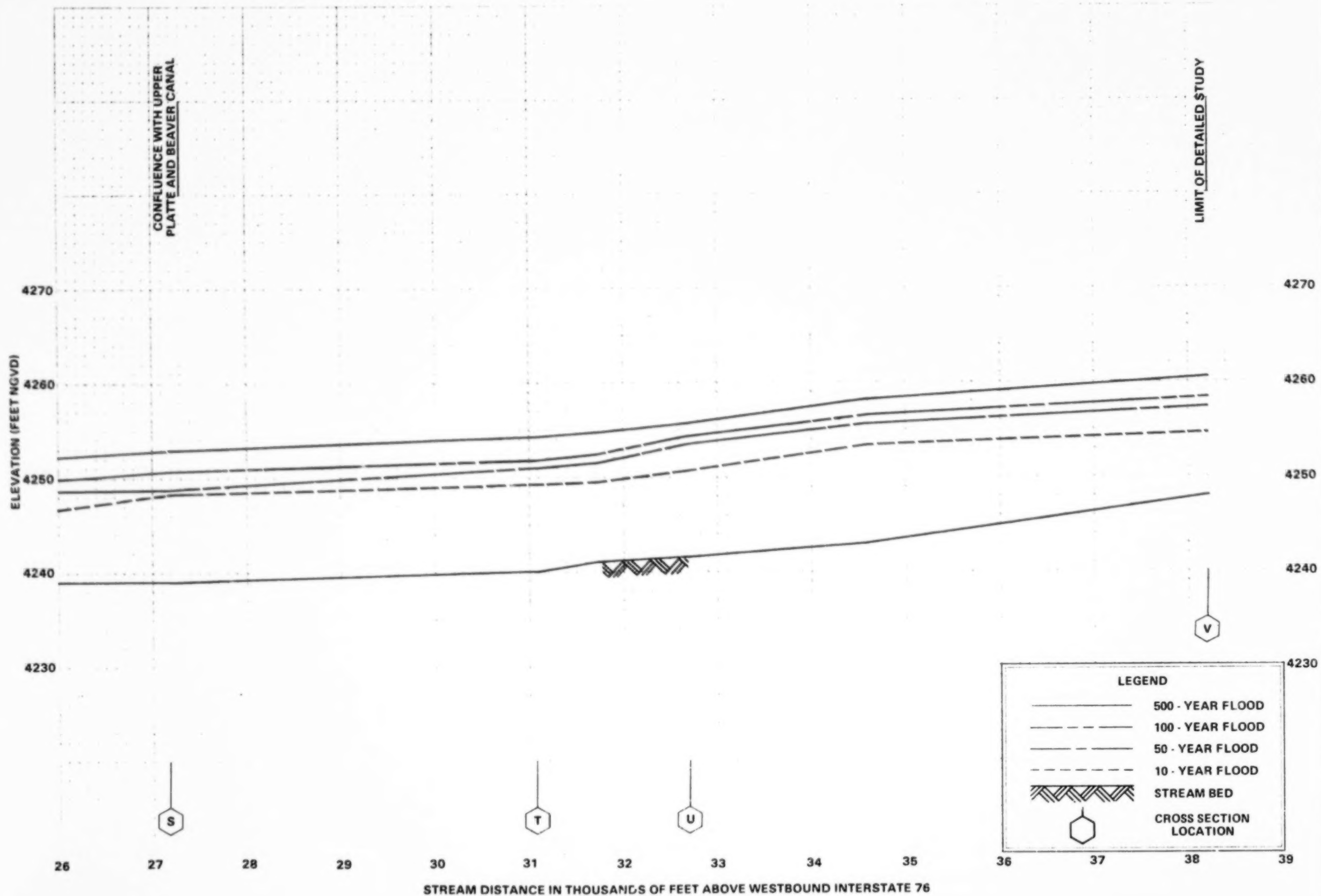
FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MORGAN COUNTY, CO
(UNINCORPORATED AREAS)

02P



FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

MORGAN COUNTY, CO
(UNINCORPORATED AREAS)

03P